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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/815,206

03/31/2004

Angel Stoyanov

25384

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7590

03/20/2008

WEYERHAEUSER COMPANY

INTELLECTUAL PROPERTY DEPT., CH 1J27

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EXAMINER

CORDRAY, DENNIS R

ART UNIT

PAPER NUMBER

1791

NOTIFICATION DATE

DELIVERY MODE

03/20/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@weyerhaeuser.com

Office Action Summary**Application No.**

10/815,206

Applicant(s)

STOYANOV ET AL.

Examiner

DENNIS CORDRAY

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 13 and 17-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13 and 17-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/16/2008 has been entered.

Oath/Declaration

The oath or declaration submitted 3/31/2004 is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02. The oath or declaration is defective because:

It does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.

The originally submitted Oath recites the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56(a), rather than 37 CFR 1.56.

Response to Arguments

Applicant's arguments filed 12/17/2007 have been addressed in the Advisory Action mailed 12/31/2007.

Claim Rejections - 35 USC § 112

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The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim recites "crosslinked cellulosic fibers, comprising bleached polycarboxylic acid crosslinked cellulosic fibers and a polyol." The previous claims and the instant Specification require the crosslinking to occur in the presence of a polyol. It is not clear whether the polyol retains its identity after the crosslinking reaction. The Specification as filed does not recite a composition comprising polycarboxylic acid crosslinked cellulosic fibers and a polyol. In addition, the amended claim provides for embodiments outside of the scope of the original Specification, such as first crosslinking the fibers and then treating with a polyol. The amended claim thus presents new matter.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-4, 6-10, 13, 17-21 and 23-29 are rejected under 35 U.S.C. 103(a) as unpatentable over Hansen et al (5589256 or 5789326) in view of Cook et al (5562740) and as evidenced by Dutkiewicz et al (5834095) and Sears et al (US 2003/0155087).

Hansen ('256) et al discloses cellulosic fibers comprising particle binders cured (crosslinked) at a temperature of about 140 °C to about 180 °C (Abs; col 6, lines 14-23 and 56-57; col 7, lines 1-3; col 38, lines 22-28; col 40, lines 62-66). The fibers can be ground wood fibers, recycled or secondary wood fibers. Polycarboxylic acid, such as citric acid, is a suitable crosslinking agent (col 38, lines 29-36). One or more particle binders can be used, such as monosaccharide and disaccharide, which are C₄-C₁₂ polyols per the definition given on p 4, lines 8-9 of the instant Specification (col 15, lines 41-45; col 16, lines 57-67; col 20, lines 34-40). The binders are added in an amount from 3-80% by weight of the fibers, particles and binders, and preferably from 3-25% by weight (col 4, lines 41-49; col 5, lines 3-6). The particles are preferably added in an amount from 5-80% by weight. A preferred weight ratio of particles to binder is 2:1 to 4:1. Thus, the amount of binder present significantly overlaps the claimed amount. The particle binders can be added before, after or simultaneously with curing (col 42, lines 31-34). Thus, in some embodiments, the fibers are crosslinked with an α -hydroxy polycarboxylic acid in the presence of a particle binder that comprises a C₄-C₁₂ polyol present in the claimed amount. While not explicitly recited, sorbitol and xylitol are well known polyols and would have been obvious to one of ordinary skill in the art.

Hansen et al ('326) discloses cellulosic fibers comprising particle binders cured (crosslinked) at a temperature of about 140 °C to about 180 °C (Abs; col 10, lines 26-40; col 11, lines 4-5 and 17-19; col 42, lines 29-42; col 45, lines 6-10). The fibers can be ground wood fibers, recycled or secondary wood fibers. Polycarboxylic acids, such as citric acid, and other crosslinking agents known in the art are suitable crosslinking

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agents (col 42, line 61 to col 43, line 14 and particularly col 43, line 8). Particle binders include polyols (sorbitol is claimed) (col 46, lines 7-15; Claims 3 and 4). The particle binders can be added before, after or simultaneously with curing (col 45, line 66 to col 46, line 3). The binders are added in an amount from 1-80% by weight of the fibrous material, and from 1-25% by weight is especially suitable (col 4, lines 49-53), which significantly overlaps the claimed amount. Thus, in some embodiments, the fibers are crosslinked in the presence of the particle binder that comprises a C₄-C₁₂ acyclic polyol, in particular sorbitol, in the claimed amount.

Hansen ('256 and '326) teach that, where the binders can also function as an interfiber crosslinking agent (polyols, are recited as examples), the fibers should contain at least 20% by weight of water, which inhibits ester bond formation and ensures that adequate binder will remain in the fibers to bind the particles to the fibers (Hansen '256, col 42, lines 38-57 and Hansen '326, col 46, lines 12-29). The crosslinking material can be cured in the presence of binders that do not crosslink without taking steps to inhibit the binder being consumed (Hansen '256, col 42, lines 57-60 and Hansen '326, col 46, lines 26-29). As admitted in the Declaration of Stoyanov (10/5/2006) some polyols, such as sorbitol and xylitol, do not crosslink cellulosic fibers thus, in at least some embodiments, the polyol will be present with the crosslinked fibers of Hansen et al ('256 or '326).

The upper limit of the curing temperature of "about 180 °C" is considered by the Examiner to overlap the claimed "182 °C" and even temperatures a few degrees higher. Thus the disclosed curing temperatures of Hansen et al ('256 and '326) significantly

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overlap the claimed range or, at least, one of ordinary skill in the art at the time of the invention would "clearly envisage" crosslinking temperature within the claimed range from the disclosure of Hansen et al.

Alternatively, the relationship between time and temperature during crosslinking of cellulosic fibers is well known in the art, as taught by Cook et al ('740), col 13, lines 32-49. For instance, for temperatures from about 145°C to about 165 °C, a curing time between about 30 and about 60 minutes is sufficient; for temperatures from about 170°C to about 190 °C, a time between about 2 and about 20 minutes is used. An upper limit of 225 °C is taught to prevent darkening or damaging of the fibers. It would also have been obvious to one of ordinary skill to obtain the crosslinked fibers without scorching by curing at the claimed temperatures for an appropriately shorter time than used for the disclosed temperature range.

Composite absorbent products that can be made using the fibers include diapers, sanitary napkins, incontinent pads and towels (Hansen '256, col 42, line 66 to col 43, line 9 and Hansen '326, col 46, lines 36-45).

Hansen et al ('256 and '326) do not disclose bleaching the fibers after crosslinking.

As discussed in previous Office Actions, bleaching is a well known process in the art for whitening pulps, papers and other substrates and hydrogen peroxide is a preferred bleach.

Cook et al discloses a method for reducing odor and increasing brightness of cellulosic fibers crosslinked with citric acid, the method comprising contacting the

crosslinked fibers with a solution of sodium hydroxide in combination with an oxidizing bleaching agent such as hydrogen peroxide (Abs; col 3, lines 29-52). The crosslinked fibers have a brightness of 80 to 86 after bleaching in an aqueous solution of sodium hydroxide and hydrogen peroxide (col 3, lines 42-52). Cook et al teaches that improved brightness has a better aesthetic appeal to customers (col 3, lines 8-12).

Cook et al does not disclose bleached fibers that have a WI at least one unit greater than unbleached fibers.

The art of Hansen et al ('256 or '326), Cook et al and the instant invention is analogous as pertaining to treating polycarboxylic acid crosslinked cellulosic fibers. Hansen et al discloses cellulosic fibers crosslinked with an α -hydroxy polycarboxylic acid in the presence of the claimed amount a C₄-C₁₂ polyol. Cook et al discloses that bleaching citric acid crosslinked fibers increases their brightness to the claimed values and provides motivation to bleach the crosslinked fibers. Cook et al also discloses the claimed bleaching compounds. It would have been obvious to one of ordinary skill in the art to bleach the polycarboxylic acid crosslinked cellulosic fibers of Hansen et al ('256 or '326) with the claimed bleaching agents in view of Cook et al to increase their brightness for customer appeal and reduce odors from crosslinking. The fibers so made have a structure substantially identical to the structure of the claimed fibers. Where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to

that of the claims, the claimed properties or functions are presumed to be inherent (MPEP 2112- 2112.01). It would thus have been obvious to obtain the claimed wet bulk and increase of Whiteness Index of the bleached fibers.

Regarding the air-dried fibers recited in Claim 18, commonly used methods of drying fibers for use in absorbent products include air-drying, oven-drying, microwave drying and flash drying (see Dutkiewicz et al, cols 13-14, lines 7-16 and Table 3; Sears et al, p 1, par 12 and p 6, par 70). Absent convincing evidence of unexpected advantages therefrom, it would have been obvious to one of ordinary skill in the art to use air-dried fibers as a functionally equivalent option.

Claims 1 and 18 are a product-by-process claims. The product of Hansen et al ('256 or '326) in view of Cook et al appears to be the same as or similar to the claimed product, bleached crosslinked cellulosic fibers, although produced by a different process. The burden therefore shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). "In the event any differences can be shown for the product of claims 1-4 and 13-16 as opposed to the product taught by the references Hansen et al ('256 or '326) in view of Cook et al, such differences would have been obvious to one of ordinary skill in the art as a routine modification of the product in the absence of a showing of unexpected results: see also In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)"

Claims 5 and 22 are rejected under 35 U.S.C. 103(a) as unpatentable over Hansen et al ('256 or '326) in view of in view of Cook et al and further in view of Smith et al (US 2002/0090511).

Hansen et al ('256 and '326) and Cook et al do not disclose malic acid as a crosslinking agent. Hansen et al ('256) teaches that polycarboxylic acids are known to be crosslinking agents for cellulosic fibers and recites citric acid as an example (col 2, lines 1-4; col 38, lines 35-37). Hansen ('326) recites polycarboxylic acid as a suitable crosslinking agent and recites citric acid as an example (col 43, lines 1-8).

Smith et al discloses that citric, malic and tartaric acids are crosslinking agents for cellulosic fibers p 6, pars 71 and 74; pp 13-14, Tables 3 & 4).

The art of Hansen et al ('256 or '326), Cook et al, Smith et al and the instant invention is analogous as pertaining to the crosslinking of cellulosic fibers. The claimed polycarboxylic acids are all α -hydroxy polycarboxylic acids and one of ordinary skill in the art would have expected them to function similarly. It would have been obvious to one of ordinary skill in the art to use any of the claimed acids as a crosslinking agent for the fibers of Hansen et al ('256 or '326) in view of Cook et al and further in view of Smith et al as well known and functionally equivalent options and have a reasonable expectation of success.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

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1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-8, 13, 18-25 and 28 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 5-8, 10-12 and 16-17 of copending Application No. 10/748930 in view of Cook et al and as evidenced by Dutkiewicz et al and Sears et al.

The copending application recites crosslinked cellulosic fibers comprising cellulosic fibers reacted with an effective amount of crosslinking agent in the presence of an effective amount of C₄-C₁₂ polyol. The claimed structure of the fibers of the copending application differs from that of the instant application in that the crosslinked fibers are not bleached. The claims of the copending application do not exclude bleaching and so are generic to the claims of the instant application. Specifically, one embodiment anticipated by the claims of the copending application are the bleached crosslinked fibers of the instant application. Cook et al teaches bleaching crosslinked fibers and the motivation to do so. As detailed in the above rejection, the properties are a result of the structure. It would have been obvious to one of ordinary skill in the art to modify the claims of the copending application to include bleaching the crosslinked fibers of to make the fibers brighter and whiter. The composition of the crosslinked

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fibers is the same in both claims, thus their properties would be the same for reasons given in the above rejections. Using air-dried fibers would have been an obvious option.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS CORDRAY whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven P. Griffin/
Supervisory Patent Examiner, Art
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/Dennis Cordray/
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